CLAIMS

What is claimed is:

1. A network device, comprising:

a core processor and core memory; and

5   a link integrity module in communication with said core processor, said link integrity module being powered separately from said core processor and said core memory;

said network device including a D3 type cold power mode wherein said link integrity module maintains power.

10

2. The network device according to claim 1, wherein:

in said D3 type cold power mode, said network device removes power from said core memory.

15   3. The network device according to claim 1, wherein:

in said D3 type cold power mode, said network device removes power from said core processor.

4.   The network device according to claim 1, further
20   comprising:

a network interface.

5. The network device according to claim 1, wherein:
said network device is a HomePNA device.

25

6. The network device according to claim 1, wherein:
said network device is a BLUETOOTH device.

7. The network device according to claim 1, wherein:

said network device is a Homeplug device.

8. The network device according to claim 1, wherein:

said network device is a wired device.

9. The network device according to claim 8, wherein said wired device is one of:

a HomePNA device; and

a G.989.1 compliant device.

10. The network device according to claim 1, wherein:

said network device is a power line device.

11. The network device according to claim 10, wherein:

said power line device is a Home Plug device.

12. The network device according to claim 1, wherein:

said network device is a wireless device.

13. The network device according to claim 12, wherein said wireless device is one of:

a HomeRF device; and

a IEEE 802.11 compliant device.

14. The network device according to claim 1, wherein:

said wireless device is an optical communications network device.

15. The network device according to claim 14, wherein:

said optical communications network device is an Infrared device.

5   16. A method of maintaining data-based link integrity in a powered down network device, comprising:

providing a link integrity module powered separately from core functionality in said network device; and

removing power from said core functionality of said network

10   device while maintaining power to said separately powered link integrity module.

17. The method of providing data-based link integrity in a powered down mode according to claim 16, wherein:

15   said network device is a HomePNA device.

18. The method of providing data-based link integrity in a powered down mode according to claim 16, wherein:

said network device is a BLUETOOTH device.

20

19. The method of providing data-based link integrity in a powered down mode according to claim 16, wherein:

said network device is a Homeplug device.

25

20. Apparatus for maintaining data-based link integrity in a powered down network device, comprising:

means for providing a link integrity module powered separately from core functionality in said network device; and

5 means for removing power from said core functionality of said network device while maintaining power to said separately powered link integrity module.

21. The apparatus for providing data-based link integrity in
10 a powered down mode according to claim 20, wherein:

said network device is a HomePNA device.

22. The apparatus for providing data-based link integrity in a powered down mode according to claim 20, wherein:
15 said network device is a BLUETOOTH device.

23. The apparatus for providing data-based link integrity in a powered down mode according to claim 20, wherein:

said network device is a Homeplug device.

20

24. A method of providing both physical and data-based link integrity capability in a network, comprising:

determining if another network device in said network requires physical link integrity signaling;

25 if another network device in said network requires physical link integrity signaling, outputting a data-based link integrity packet in a physical link integrity mode; and

if no other network device in said network requires physical link integrity signaling, outputting a data-based link integrity packet in a
30 non-physical link integrity mode.

18

25. The method of providing both physical and data-based link integrity capability in a network according to claim 24, wherein:

said network is a HomePNA network.

5   26. The method of providing both physical and data-based link integrity capability in a network according to claim 24, wherein:

said another network device requiring physical integrity signaling is a HomePNA version 1.0 device.

10   27. Apparatus for providing both physical and data-based link integrity capability in a network, comprising:

means for determining if another network device in said network requires physical link integrity signaling;

means for outputting a data-based link integrity packet in a

15   physical link integrity mode if another network device in said network requires physical link integrity signaling; and

means for outputting a data-based link integrity packet in a non-physical link integrity mode if no other network device in said network requires physical link integrity signaling.

20

28. The apparatus for providing both physical and data-based link integrity capability in a network according to claim 27, wherein:

said network is a HomePNA network.

25   29. The apparatus for providing both physical and data-based link integrity capability in a network according to claim 27, wherein:

said another network device requiring physical integrity signaling is a HomePNA version 1.0 device.

30

19